

Docket No. HUANG04
US App. No. 10/537,841

IN THE CLAIMS

1. (currently amended) A catalyzer for clean non-woody pulping comprising:

5 wt% - 9 wt% of sodium salicylate;

2 wt% - 5 wt% of anion silicic acid silicate softener;

3 wt% - 7 wt% of cooking aids;

2.1 wt% - 3.7 wt% of liquid chlorine or gaseous chlorine; and

balance of water;

wherein said cooking aids includes:

0.01 wt% - 5 wt% of ethanol and/or ether;

0.25 wt% - 35 wt% of concentrated sulfuric acid and/or carbon tetrachloride;

0.15 wt% - 30 wt% of basic Na_2SO_3 ; and

balance of water.

Claim 2. (canceled)

3. (currently amended) A process for using the catalyzer for clean non-woody pulping according to claim 1, comprising the following steps:

a) cutting and impurities removing;

wherein a raw material is cut into pieces with the length of between 10mm and 15mm, the removal rate of remaining fringe, kernel as well as dust is above 95%;

b) feed preparation and impurities removing;

wherein the raw material is soaked in the catalyzer to prepare for 10-14 hours, the dry weight of the raw material is 3-8% of the weight of the catalyzer, deposition and impurities removing are proceeded through a deposition channel provided at bottom of a bath for the feed preparation and impurities removing;

c) dividing into fibers by refining;

wherein the raw material is divided into fibers through a refining disc so that it is changed to rough fiber bundle;

d) catalysis copolymerization;

wherein a pulp obtained from the above steps enters into a catalysis tower to perform catalysis copolymerization reaction for 10-14 hours ~~at ambient temperature and pressure~~;

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e) refining;

wherein the pulp is ground ~~grounded~~ into a papermaking stock through a refiner;

f) concentration and separation;

wherein the pulp and the catalyzer are separated by a thickener, the papermaking stock with different concentration is separated according to requirements, while residual liquor of the catalyzer is recovered;

g) pulp bleaching;

wherein bleaching is proceeded by a bleaching equipment to obtain a bleached pulp;

h) pulp washing; and

wherein the bleached pulp is washed in a pulp washing vessel, then a finished pulp is obtained.

4. (previously presented) The process for using the catalyzer for clean non-woody pulping according to claim 3, characterized in that a submerged mesh is arranged on the bath for the feed preparation and impurities removing.

5. (previously presented) The process for using the catalyzer for clean non-woody pulping according to claim 3, characterized in that calcium hypochlorite is used for bleaching liquor, and a supplying port of chlorine gas is added at a recycle entrance of a fan pump, through which the chlorine gas is added intermittently during the bleaching to increase available chlorine in the bleaching liquor so that the available content of bleaching liquor remains constant during the whole bleaching process.

6. (previously presented) The process for using the catalyzer for clean pulping according to claim 3, characterized in that said raw material is selected from the group consisting of wheat straw, rice straw, straw stem, corn stalk, cotton straw or reed.

7. (currently amended) A catalyzer for clean non-woody pulping comprising:

5 wt% - 9 wt% of sodium salicylate;

2 wt% - 5 wt% of anion silicic acid ~~silicate~~ softener;

3 wt% - 7 wt% of cooking aids;

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2.1 wt% - 3.7 wt% of chlorine; and
balance of water;

wherein said cooking aids includes:

0.01 wt% - 5 wt% of ethanol and/or ether;

0.25 wt% - 35 wt% carbon tetrachloride;

0.15 wt% - 30 wt% of basic Na_2SO_3 ; and

balance of water.